

What is claimed is:

1. A chemical mechanical planarization abrasive composition, which comprises non-polymeric organic particles as an abrasive material and a solvent in the form of a slurry.
2. The abrasive composition according to claim 1, wherein the non-polymeric organic particles consist essentially of at least one compound selected from the group consisting of melamine and a derivative thereof.
3. The abrasive composition according to claim 1, wherein said non-polymeric organic particles have an average particle size of less than 1 μm .
4. The abrasive composition according to claim 1, wherein the non-polymeric organic particles contain at least one functional group selected from the group consisting of amino, amido and metal salt thereof.
5. The abrasive composition according to claim 3, wherein essentially all of said particles have a size distribution between +75% and -75%.
6. The abrasive composition according to claim 3, wherein the solvent is soft water, the non-polymeric organic particles are present in a concentration of 0.001 – 20 w/w %, and the slurry further comprises 0.1 – 10 w/w % of an oxidizing agent, 0.05 – 10 w/w % of a chelating agent, 0.01 – 10 w/w % of a surfactant, and 0 – 10 w/w % of a passivation agent.
7. The abrasive composition according to claim 6, wherein the slurry has a pH in the range of 2 – 12.
8. The abrasive composition according to claim 6, wherein the oxidizing agent is at least one selected from the group consisting of peroxide, chlorate,

chlorite, perchlorate, bromate, bromite, perbromate, nitrate, persulfate, iodate, permanganate and hypochlorite.

9. The abrasive composition according to claim 6, wherein H_2O_2 is the oxidizing agent and is present in an amount of 0.1 – 6 % w/w.
10. The abrasive composition according to claim 6, wherein the complexing agent is at least one selected from the group consisting of polyamine, polyaminocarboxylic acid and an amino acid.
11. The abrasive composition according to claim 6, wherein the complexing agent is an amino acid.
12. The abrasive composition according to claim 6, wherein the surfactant is a nonionic surfactant.
13. The abrasive composition according to claim 6, wherein the surfactant is at least one selected from the group consisting of an alkylated polyethylene oxide, an alkylated cellulose, an alkylated polyvinyl alcohol, an alkyl carboxylic acid, an aryl carboxylic acid, a sulfate salt and an ammonium salt.
14. The abrasive composition according to claim 6, wherein the slurry further comprises at least one of inorganic abrasive particles and polymeric abrasive particles.
15. The abrasive composition according to claim 14, wherein the slurry further comprises polymeric abrasive particles and said polymeric abrasive particles are formed by combining a substituted or unsubstituted formaldehyde, and at least one of (a) a substituted or unsubstituted melamine, (b) a substituted or unsubstituted urea, (c) a substituted or unsubstituted phenol and (d) a substituted or unsubstituted resorcinol.

16. The abrasive composition according to claim 14, wherein the slurry further comprises inorganic abrasive particles which are at least one selected from the group consisting of SiO_2 , Al_2O_3 , ZrO_2 , CeO_2 , SiC , Fe_2O_3 , TiO_2 , Si_3N_4 and diamond.
17. The abrasive composition according to claim 6, wherein the passivation agent is at least one selected from the group consisting of benzotriazole, benzothiazole, 1 H-benzotriazoleacetonitrile, benzotriazole-5-carboxylic acid, 2(3H)-benzothiazolone, and 1 H-benzotriazole-1-methanol.
18. A chemical mechanical planarization process, which comprises:
applying to a surface of a semiconductor the chemical mechanical planarization abrasive slurry composition of claim 1.
19. The chemical mechanical planarization process of claim 18, wherein the solvent is soft water, the non-polymeric organic particles are present in a concentration of 0.001 – 20 w/w %, and the slurry further comprises 0.1 – 10 w/w % of an oxidizing agent, 0.05 – 10 w/w % of a chelating agent, 0.01 – 10 w/w % of a surfactant, and 0 – 10 w/w % of a passivation agent.
20. A semiconductor prepared using the process of claim 18.